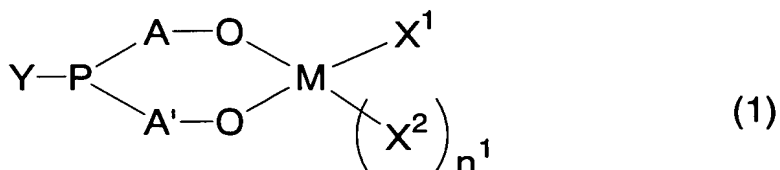


Abstract

There are provided a transition metal complex of formula (1):



wherein M represents an element of Group 6 of Periodic Table of Elements, A and A' are the same or different, and represent a substituted or unsubstituted C1-10 alkylene group or the like, Y represents a substituted or unsubstituted C1-10 alkyl group, or the like, X¹ and X² are the same or different, and represent a hydrogen atom, a halogen atom, a substituted or unsubstituted C1-10 alkyl group, or an amino group disubstituted with C1-20 hydrocarbon, and n¹ is an integer of 0 to 3, an olefin polymerization catalyst obtained by combining a transition metal complex with an organic aluminum or aluminoxane, a polymerization catalyst further containing a boron compound, and a process for producing olefin polymer using the polymerization catalyst.